

## REMARKS

Claims 27-42, 44, and 52-55 are pending in the instant application. Claims 27-42, 44, and 52-54 presently stand rejected. Claims 27-29, 33, and 37-40 are amended herein. Claim 55 is newly presented. Claim 43 is hereby cancelled without prejudice. Entry of this amendment and reconsideration of the pending claims are respectfully requested.

### *Claim Rejections – 35 U.S.C. § 102*

Claims 27, 28, 30-34, 36-39, 42-44, and 52-54 stand rejected under 35 U.S.C. § 102(b) as being anticipated by A.M. Weiner, et al., "Spectral holography of shaped femtosecond pulses" ("Weiner").

A claim is anticipated only if each and every element of the claim is found in a single reference. M.P.E.P. § 2131 (citing *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628 (Fed. Cir. 1987)). "The identical invention must be shown in as complete detail as is contained in the claim." M.P.E.P. § 2131 (citing *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226 (Fed. Cir. 1989)).

Amended independent claim 27 recites, in pertinent part,

(2) the subgratings are configured such that (i) a first input optical pulse, incident to the active material along the input path and having a first temporal waveform substantially similar to one of a ***plurality of address temporal waveforms encoded in the subgratings each corresponding to one of the output paths...*** (emphasis added)

Applicants respectfully submit that Weiner fails to disclose a ***plurality of address temporal waveforms*** encoded in subgratings ***each corresponding to one of the output paths***. Rather, referring to FIG. 1(b) and FIG. 2 of Weiner, Weiner discloses

Spectral holograms were first recorded for unshaped signal pulses delayed (under stepper-motor control) by various amounts with respect to the reference beam and then read out with a short test pulse. Data are plotted for four separate holograms, corresponding to signal pulses delayed by 0, 1, 2, and 3 ps, respectively.

*Weiner*, page 224, right column, lines 8-14. However, Weiner fails to disclose the four separate holograms corresponding to different output paths. Rather, FIG. 1(b) illustrates the signal pulses propagating along a single output path. In contrast, referring to FIG.

2B of the present application, claim 27 recites a plurality of address temporal waveforms encoded in the subgratings each corresponding to one of the output paths (illustrated in FIG. 2B as output (a), output (b), and output (c)).

Consequently, Weiner fails to anticipate each and every element of claim 27, as required under M.P.E.P. § 2131. Accordingly, Applicants request that the instant § 102 rejection of claim 27 be withdrawn.

Amended independent claim 37 now recites, in pertinent part, “each of the plurality of address temporal waveforms corresponding to one of the plurality of output paths.” For the reasons discussed above in connection with claim 27, Applicants respectfully request that the instant § 102 rejection of claim 37 be withdrawn.

Independent claim 44, recites in pertinent part, “a router responsive to change the routing of data in response to an optical pulse having a prescribed detectable temporal waveform....” Applicants respectfully submit that Weiner fails to disclose the aforementioned recited element of claim 44. In rejecting claim 44, the Examiner stated, “the case of angularly multiplexed holograms discussed atop Page 2257 fairly comprehends data routing. One of ordinary skill would appreciate that angularly multiplexed recordings will be ‘routed’ to different locations upon playback.” *Office Action* mailed April 22, 2003, page 6, lines 1-4. However, Applicants are unable to find any mention of “angularly multiplexed recordings” within the Weiner disclosure. Weiner does disclose

The spectral resolution is determined by the **angular dispersion** of the gratings and the divergence of the input beam and can be improved by increasing the **angular dispersion** and the input beam size.

*Weiner*, page 225, right column. However, this section of Weiner simply discloses how to determine spectral resolution, it does not disclose routing data. In any event, claim 44 recites, in pertinent parts, “**a composite grating** for receiving input light pulses ... and transmitting, in response thereto, output light pulses **to the router** along an output path” and the “router responsive to change the routing of data in response to an optical pulse....” Weiner fails to disclose a router to change the routing of data in response an optical signal transmitted from a composite grating.

Consequently, Weiner fails to anticipate each and every element of claim 44, as required under M.P.E.P. § 2131. Accordingly, Applicants request that the instant § 102 rejection of claim 44 be withdrawn

*Claim Rejections – 35 U.S.C. § 103*

Claims 29, 35, 40, and 41 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Weiner.

“To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. All words in a claim must be considered in judging the patentability of that claim against the prior art.” M.P.E.P. § 2143.03.

Dependent claims 28- 36, 38-42, and 52-54 are patentable over the prior art of record for at least the same reasons as discussed above in connection with their respective independent claims, in addition to adding further limitations of their own. Accordingly, Applicants respectfully request that the instant § 102 and § 103 rejections for claims 28- 36, 38-42, and 52-54 be withdrawn.

*New Claim*

New claim 55 recites, in pertinent parts,

the subgratings configured to (i) transmit the output optical pulse along ***one of the multiple output paths*** ... if the input optical pulse includes a temporal waveform substantially similar to one of a set of address temporal waveforms encoded in the subgratings, the one of the multiple output paths ***determined based on the one of the set of address temporal waveforms***...

Applicants submit that the prior art of record fails to disclose a composite grating that routes an output optical pulse along one of multiple output paths based on which one of a set of address temporal waveforms a temporal waveform of an input optical pulse is substantially similar to.

## **CONCLUSION**

In view of the foregoing amendments and remarks, Applicants believe the applicable rejections have been overcome and all claims remaining in the application are presently in condition for allowance. Accordingly, favorable consideration and a Notice of Allowance are earnestly solicited. The Examiner is invited to telephone the undersigned representative if the Examiner believes that an interview might be useful for any reason.


### CHARGE DEPOSIT ACCOUNT

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a). Any fees required therefore are hereby authorized to be charged to Deposit Account No. 02-2666. Please credit any overpayment to the same deposit account.

Respectfully submitted,

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